

APPENDIX A

**MONITORING PROGRAM AND
REPORTING REQUIREMENTS (MPRR)**

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Monitoring Program & Reporting Requirements

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LIST OF ATTACHMENTS

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1.0 INTRODUCTION

1.1 BACKGROUND

This stormwater Monitoring Program and Reporting Requirements Plan (MPRR) will be implemented by Gregory Canyon Ltd. (GCL) for this facility as a component in compliance with the statewide National Pollutant Discharge Elimination System (NPDES) Stormwater Pollution Prevention Program (SWPPP). The State of California General Industrial Stormwater Permit (General Permit) was adopted by the State Water Resources Control Board (SWRCB) on November 19, 1991, and revised on April 17, 1997. The General Permit requires that a SWPPP has also been prepared and implemented for solid waste landfill sites which have in the past or are currently receiving industrial wastes. In addition, a MPRR must be prepared and implemented to monitor the performance of the BMPs to prevent stormwater pollution as described in the SWPPP.

1.2 OBJECTIVES

The objectives of this MPRR are:

- To monitor the quality of stormwater discharge relative to effluent limitations (if any), discharge prohibitions, and receiving water limitations;
- To evaluate and make recommendations for revising the SWPPP for this facility; and,
- To evaluate through stormwater monitoring, the Best Management Practices (BMPs) used at this facility to control pollutant discharges in stormwater run-off;
- To comply with all other requirements of the General Permit.

1.3 IMPLEMENTATION OF THIS MPRR

This MPRR will be implemented upon approval of the Gregory Canyon Landfill (GCLF) project. This MPRR was prepared to monitor the effect of the SWPPP for the proposed project area.

1.4 MPRR REVIEW AND REVISIONS

As the MPRR is implemented, a report documenting the results of monitoring will be prepared annually. These results will serve as the basis for revising the SWPPP and in-turn this MPRR to meet the objectives in Section 1.2 of the document. Any future changes required by the regulatory agency or changes in regulations will be made within 60 days of the request unless an extension is requested by GCL and approved by the RWQCB. A MPRR Revision Form will be completed. A copy of this form is included in Attachment 1.

1.5 MPRR LOCATION AND PUBLIC ACCESS

The MPRR will be maintained on-site at GCLF's administration office. A copy of the MPRR will also be maintained at the landfill operator's office at the site. The RWQCB or EA may also request a copy of the MPRR. This document is a report considered available to the public under Section (308)(b) of the Clean Water Act.

1.6 MONITORING REQUIREMENTS

Sections 3.0, 4.0 and 5.0 of this MPRR define the monitoring requirements for this facility. Quantitative monitoring will be conducted for individual monitoring. GCLF will conduct its own quantitative sampling and testing. In addition to quantitative monitoring, the operator will conduct a visual monitoring program of the site as discussed in Section 4.0.

GCLF will estimate the volume of stormwater discharge from the facility during the significant storm event (see Section 5.0). A significant storm event is defined as a storm that causes a discharge of stormwater and is preceded by a minimum of three (3) working days of dry weather.

Quantitative monitoring and visual observations will be performed only if a significant storm event occurs during the scheduled operating hours of the facility. If visual observations are not performed because the significant storm event occurs outside this time period, it will be documented in the annual monitoring report.

2.0 FACILITY DESCRIPTION AND SAMPLING LOCATION

Refer to Section 2.0 of the SWPPP for site description, drainage, and sampling location information.

3.0 QUANTITATIVE MONITORING REQUIREMENTS

The General Permit requires site operators to monitor two significant storm events each year during the wet season (October 1 through May 31). This section sets forth the requirements for quantitative sampling and testing at this facility.

3.1 INDIVIDUAL MONITORING PROGRAM

In the event that individual monitoring is required in the future, an individual MPRR will be prepared. However, it is not proposed at this time.

3.2 ANALYTICAL REQUIREMENTS

This facility is not subject to stormwater effluent limitations as mandated in 40 Code of Federal Regulations (CFR), Subchapter N. In addition, the GCLF will be a new facility, and therefore has not had any known or recorded releases of hazardous chemicals subject to reporting on EPA Form R. Subsequently, initial stormwater analyses will be limited to the water quality parameters listed in the General Permit, Section B, and additional toxic chemicals and other pollutants likely to be present in significant quantities in the stormwater discharge as follows:

Water Quality Parameters

- Oil and Grease (O&G) or Total Organic Carbon (TOC);
- pH;
- Total Suspended Solids (TSS);
- Specific Conductance (SC); and
- Iron

Additional Parameters

- Heavy Metals;
- Petroleum Hydrocarbons;
- Pesticides; and,
- Herbicides.

The additional parameters are to be monitored to check for certain pollutants expected to be present in an active landfill. If significant quantities of a pollutant within the "additional parameters" are not detected in samples from two consecutive storm events, subsequent analyses of that pollutant will be eliminated until the pollutant is likely to be present again.

An insignificant quantity of a pollutant is defined as one which will not cause or threaten to cause pollution, contamination, nuisance; will not adversely impact human health or the environment; and will not cause or contribute to a violation of an applicable water quality standard for a receiving water body.

3.3 RATIONALE FOR QUANTITATIVE SAMPLING

The analytical requirements discussed in Section 3.2 are outlined in the General Permit and will be used as screening tools to identify pollutants that could potentially impact waters of the Nation and the State. These analyses check for chemicals which may occur in residential, commercial, and construction waste deposited at the facility.

Table 1 (included as Attachment 2) lists the required sample preservation and sample analysis procedures. All samples taken will be grab samples. Table 2 in Attachment 2 includes the grab sample bottle requirements. Composite samples are not required by the General Permit and therefore will not be taken.

Analyses will be conducted according to test procedures specified in 40 CFR, Part 136. Sampling will be conducted in accordance with the current edition of "Standard Methods for the Examination of Water and Wastewater". Analyses will be conducted at a laboratory certified by the State Department of Health Services.

4.0 VISUAL MONITORING REQUIREMENTS

A visual monitoring program will be implemented for this facility to observe stormwater run-off from the site. This program will be conducted even if this facility is not required to conduct quantitative sampling and testing. Visual observations will be conducted during both wet and dry seasons.

4.1 DRY SEASON OBSERVATIONS

During the dry season (June 1 to September 30), visual observations will be conducted at least twice for the presence of non-stormwater discharges at all stormwater discharge locations at the facility. The observations will be used to determine the presence of stains, sludges, odors, and other abnormal conditions. The date, location, and description of each visual observation will be documented and submitted to the RWQCB with the annual monitoring report.

4.2 WET SEASON OBSERVATIONS

During the wet season (October 1 to May 31), visual observations will be conducted monthly during the rainy season whether or not there is a significant storm event. The presence of floating and suspended materials, oil and grease, discoloration, turbidity, and odor will be documented.

If visual observations are not able to be made because of adverse climatic conditions, the reason for not conducting the visual observations will be stated in the annual monitoring report to the RWQCB.

Visual observations will only be performed if a significant storm event occurs during the scheduled operation hours and ends two hours prior to the scheduled closure of the facility. If visual observations are not performed because the significant storm event occurs outside this time period, this will be documented in the annual monitoring report.

Visual observations will also be performed of stored or contained storm water at the time of discharge. The contained storm water will need to be sampled at the time of discharge.

5.0 ESTIMATING VOLUME OF STORMWATER RUN-OFF

Stormwater run-off flow rates and volumes will be estimated by using the total rainfall amount for the storm event and estimated run-off coefficients for the facility. Run-off coefficients represent the percentage of total rainfall that will be considered run-off from the facility. As such, the coefficients reflect the ground surface or cover material. To estimate run-off volume and rates, it will be assumed that paved areas and other impervious structures such as roofs have a run-off coefficient of 0.90. Therefore, 90 percent of rainfall is conveyed from these areas as run-off. For pervious surfaces, it can be assumed that the run-off coefficient of 0.5 will be used. The total volume of discharge for the event is then estimated by:

$$\text{total run-off volume (cubic feet)} = \text{total rainfall (ft)} \times [\text{facility pervious area} \times 0.5]$$

The total volume of run-off will be estimated for the entire landfill area.

An estimated average flow rate will then be calculated during the period of measurable run-off. The average flow rate = Total run-off volume ÷ duration of storm event.

6.0 PRE-SAMPLING ACTIVITIES

The following tasks will be conducted during the wet season to ensure that personnel, equipment, services, and procedures are in place to collect quantitative stormwater samples at the GCLF during a significant storm event.

- The National Weather Service will be contacted or the weather broadcasts will be monitored to determine when a significant storm event is about to occur. The National Oceanic Atmospheric Administration broadcasts weather information on frequency bands specific to different areas of the state.
- Install a rain gauge on-site for rainfall measurements.
- Designate trained personnel to implement the MPRR during a significant storm event.
- The analytical laboratory will be consulted regarding quality assurance requirements (other than those discussed in this plan) and the containers, preservatives, and sample volumes necessary for the analyses.
- Obtain a sufficient number of containers with preservatives from the laboratory to collect grab samples for each sampling location. Section 9.2 discusses the implementation of Quality Assurance/Quality Control (QA/QC) procedures for additional sample collection. Table No. 2 shows the requirements for the number of grab sample containers.
- On the day prior to the arrival of a significant storm event, transportation of the samples to the laboratory and notification of the laboratory when the samples will arrive will be arranged.
- Clarify personnel roles and responsibilities, assemble the necessary equipment (Section 7.1), and ensure that sampling logistics are understood by all sampling personnel.

7.0 SAMPLING PROCEDURES AND EQUIPMENT

7.1 EQUIPMENT AND SUPPLIES

The equipment and supplies required for stormwater sampling are listed below:

- A set of grab sample storage bottles and preservatives, as listed in Table 1 and totaled in Table 2.
- QA/QC duplicate sets of sample bottles if needed (see Section 9.2).
- Coolers, ice packs, tape, and vermiculite for transporting filled sample storage bottles to the certified analytical laboratory. At least one 48-quart cooler will be required for the grab samples. An additional cooler may be needed for shipment of QA/QC duplicate grab samples.
- Portable pH meter.
- Thermometer in degrees Centigrade.
- Sample collection device (e.g., beaker with handle) if it is not possible to collect samples directly into storage bottles.
- Squirt bottle of deionized rinse water to rinse pH probe and other equipment.
- Surgical rubber gloves.
- Field notebook with waterproof pages, and pen with waterproof ink.
- Stopwatch or watch for Volatile Organic Compounds (VOC) sample timing.
- Grease pencil or other marking device.
- Flashlight for sampling at dawn or dusk.
- Chain-of-custody forms to log and document sample transport from the site to the certified analytical laboratory.

Sampling equipment used to collect or transfer samples (e.g., beaker with arm, or graduated cylinder) will be decontaminated before and after each use, and rinsed with run-off prior to sample collection. The Chain-of-Custody/Sampling Analysis Request Form is included in Attachment 3.

7.2 FIELD MEASUREMENTS

PH and temperature will be recorded at the time the samples are collected. To ensure accurate readings, the pH meter will be calibrated using buffer solutions of

known pH. Following calibration, a sufficient volume of stormwater run-off will be collected in a clean, empty container (not one of the sample storage bottles) and the temperature of the discharge will be obtained with a thermometer. The pH meter will be adjusted to this temperature before the pH of the sample is obtained. The temperature and the pH reading will be recorded in a field notebook, and both the pH and temperature probes will be rinsed with deionized water before and after each use.

7.3 GRAB SAMPLING PROCEDURES

It is important that grab samples be collected within the first hour of stormwater discharge. If this is impractical, the samples will be taken within the next 30 minutes, and the reason for not collecting a sample during the first 30-minute period will be provided in the annual monitoring report. After sampling, sample storage bottles will be labeled with the information specified in Section 8.2. If grab samples cannot be taken within the first hour, the sampling event will be terminated and documented for the annual monitoring report.

8.0 COMPLETION OF SAMPLING

Additional steps required to complete sampling and sample shipment will be coordinated with the laboratory. These steps are outlined below:

8.1 SAMPLE CONTROL

Procedures for identifying, preserving, packaging, handling, shipping, and storing of samples obtained in the field are described in the following sections. The objectives of the procedures is to ensure that all samples can be readily identified and preserve their original condition at the time of sampling.

8.2 IDENTIFICATION

Samples will be identified at the time of collection by marking the tag or label attached to the sample container (e.g., jar, bottle, bag). Sample identification will include the following:

- Facility name and location;
- Unique sample number;
- Sampling location;
- Sample date;
- Individual performing the sampling;
- Preservation or conditioning employed;
- Time of sampling; and
- Sample temperature.

8.3 PREPARATION, PACKING, AND SHIPPING

Samples will be properly preserved in containers compatible with the intended analysis. Polyethylene or glass containers are usually required, and samples must be cooled to about 4 degrees Centigrade. Samples will be placed in ice chests containing adequate amounts of ice, and the chests will be sealed, addressed, and identified as appropriate.

If the samples have been consigned to a commercial carrier, field personnel will notify the laboratory of the shipment by telephone. If the samples are transported by field personnel, the laboratory will be notified of the estimate time or arrival. A sample Chain-of-Custody/Sampling Analysis Request Form (see Appendix B) will show the information that will be provided to the laboratory. The form will be completed at the site by field personnel and shipped with the samples to the laboratory. The Sampling Analysis portion of the form is used to define analytical requirements and to help ensure that sample holding times are not exceeded. The Chain-of-Custody portion of the form is discussed below.

8.4 CHAIN-OF-CUSTODY PROCEDURES

An essential consideration in obtaining accurate chemical analyses is the ability to demonstrate that the samples were obtained from the locations stated and that they reached the laboratory without alteration. Therefore, evidence of collection, shipment, laboratory receipt, and laboratory custody until disposal must be documented. Chain-of-custody procedures will be used to document each sample and the individuals responsible for sample collection, shipment, and receipt.

The following procedures will be followed for all samples subject to chemical analysis:

- The sample container will be sealed in the field. The custody of samples that do not arrive at the laboratory with seals intact will be considered invalid.
- A chain-of-custody record will be initiated in the field for each container and will accompany the sample container to the laboratory.
- Each time custody of the sample changes, the new custodian will sign and date the Chain-of-Custody form (see Attachment 3). Sample transfer will be carried out by person-to-person exchange of custody documents and samples.
- Upon sample destruction or disposal, the custodian responsible for disposal will complete the chain-of-custody form (see Attachment 3), file a copy, and send a copy to the facility or to the designated representative for recordkeeping purposes.
- The custody of individual sample containers will be documented by indicating appropriate chain-of-custody information on each sample tag or label.

9.0 QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC)

The aim of the QA/QC component of this monitoring program is to assure that all elements of the program are implemented and that all monitoring is conducted by trained personnel. Thus, this QA/QC will be divided into two parts: personnel and procedures.

9.1 PERSONNEL

The Stormwater Pollution Prevention Leader (SPPL) or his/her designee will be in charge of managing the MPRR. The SPPL will be adequately trained to obtain a thorough understanding of the objectives, requirements, and procedures of this MPRR.

At least one person will conduct the following tasks:

- Conduct visual observations;
- Prepare for a sampling event;
- Procure the necessary supplies;
- Coordinate sampling activities with laboratory personnel for sample analyses;
- Collect samples and conduct field measurements;
- Package and ship samples to laboratory;
- Organize and document all records; and,
- Prepare the annual report.

GCL will be responsible for training and documenting this training. This documentation will be retained by GCL and will include:

- Name of the trained person;
- Assigned responsibilities to this person;
- Qualifications of this person to complete the assignments;
- Time and place of training; and,
- Duration and subjects of training.

9.2 PROCEDURES

In order to provide for the successful implementation of this monitoring program, certain measures and procedures are built into this program and must be followed. GCL will be responsible for the implementation of the following QA/QC procedures:

- Any instruments, such as a pH meter, will be calibrated prior to each sampling event according to the procedures recommended by the manufacturer. The time and place of calibration, the person conducting the calibration, and the calibration results will be recorded in a field notebook.
- A duplicate set of samples will be taken for pollutant analyses to evaluate the reliability of laboratory tests. These samples will be collected, analyzed, and documented the same way as the other samples. This will be done for one significant storm event every other year.
- Within two weeks after the results of laboratory analyses are received, the SPPL will review the documentation of all pertinent records, and ensure that they conform to the recordkeeping provisions in this MPRR.
- On October 1 of each subsequent year, the SPPL will arrange for sampling any storm event that is reasonably expected to produce a significant discharge to ensure that two storm events of the wet season are sampled and analyzed.
- Within 24 hours after each sampling event, the SPPL will determine if the storm event that has been sampled was indeed a significant storm event. Sampling of a non-significant storm event will not constitute compliance with the General Permit.

10.0 EFFECTIVENESS OF MONITORING PROGRAM

The results of the MPRR will be evaluated continually to see if the Best Management Practices (BMPs) being implemented at the facility are achieving significant reductions in polluted stormwater discharge. If reductions are not materializing, then it may be necessary to implement additional BMPs and modify the SWPPP with a time schedule for implementation.

11.0 RETENTION OF RECORDS AND ANNUAL REPORT

11.1 RETENTION OF RECORDS

Records of all stormwater monitoring information and copies of all reports required by the General Permit will be retained for a period of at least five years from the date of the sample, visual observation, measurement, or report. These records will include:

- The date, exact place, and time of quantitative sampling, visual observation, and/or flow measurements.
- The name of individual(s) who performed the above tasks.
- Flow measurement or estimates and standard visual observations.
- The date(s) analyses were performed and the time analyses were initiated.
- The analytical techniques or methods used and the results of such analyses.
- QA/QC control results.
- Records of non-stormwater discharge, if any.
- All calibration and maintenance records of instruments used.
- All original strip chart recordings for continuous monitoring instruments, if used.

11.2 ANNUAL REPORT

All stormwater monitoring results will be reported by July 1 of each year to the Executive Officer of the RWQCB and to the appropriate municipal stormwater management agency if requested. The report will include copies or summaries of all the retained documents except for original strip charts, calibration and maintenance records of instruments used. The report will be signed and certified in accordance with Standard Provisions 9 and 10 of Section C of the General Permit. The certification will state that the SWPPP and MPRR for the facility have been implemented and are in compliance with the requirements of the General Permit.

12.0 ANNUAL SITE INSPECTION

An annual site inspection will be conducted at GCLF as required under the SWPPP. The purpose of the site inspection is to identify those areas contributing to the discharge of stormwater and to evaluate whether the BMPs implemented under the SWPPP are effective. The record of the inspection will include the date of inspection, the individual(s) performing the inspection, and the record of observations.

Upon completion of the annual inspection, the certification and inspection records must be signed and certified in accordance with Standard Provisions 9 and 10 of Section C of the General Permit. Any non-compliance will be reported in accordance with the General Permit.

ATTACHMENT 1
MPRR REVISION FORM

REVISION FORM

I certify that the following revisions were made to the MPRR in accordance with the pollution prevention committee. Revision explanations and descriptions have been sent to the MPRR record keeper.

[illegible]

ATTACHMENT 2

**SAMPLE PRESERVATION AND ANALYSIS PROCEDURE
AND
GRAB SAMPLE BOTTLE REQUIREMENT TABLES**

Table 1

Sample Preservation and Analysis Procedures

Water Quality Parameters	EPA Analytical Procedures	Sample Volume (ml)	Container Type ⁽¹⁾	Preservative	Treatment	Maximum Holding Time
Oil and Grease ⁽²⁾	EPA 413.1	1,000	G (Separate)	pH < 2/H ₂ SO ₄	Cool to 4°C	28 days
TOC ⁽³⁾	EPA 415.1	100	Amber Glass Bottle TFE cap	pH < 2/H ₂ SO ₄	Cool to 4°C	28 days
TSS	EPA 160.2	300	P or G	None	Cool to 4°C	7 days
SC	EPA 120.1	500	P or G	None	Cool to 4°C	28 days
pH	EPA 150.1	100	Analyze Immediately with a pH Meter			
Water Quality Parameters	Analytical Procedures	Sample Volume (ml)	Container Type ⁽¹⁾	Preservative	Treatment	Maximum Holding Time
Heavy Metals (4)	Title 26	1,000	P or G	pH < 2 HNO ₃	Cool to 4°C	6 months
Petroleum Hydrocarbons	EPA 418.1	1,000	G	None	Cool to 4°C	28 days
Pesticide	EPA 608	1,000	Glass with TFE Cap	None	Cool to 4°C	7 day to extraction 40 days after extraction
Herbicides	See Note ⁽⁴⁾					

Notes

- ⁽¹⁾ As of 5/29/92, there is not an EPA approved test procedure for herbicides. In the interim, the pesticide test procedure (EPA 608) will suffice.
- ⁽²⁾ Oil & grease must be collected in a separate glass container.
P - plastic
G - glass
TFE - Teflon lined
- ⁽³⁾ TOC may be substituted for O&G.
- ⁽⁴⁾ See California Code of Regulations, Title 26, Division 22, Section 66261.4, Table II. Tests to be conducted for Total Threshold Limit Concentrations (TTLC) on 17 metals.

Table 2

Grab Sample Bottle Requirements

Parameter	Number of Bottles	Remarks
Oil and Grease (O and G) or Total Organic Carbon (TOC)	1	Perform O&G or TOC
Total Suspended Solids (TSS)	1	
Specific Conductance (SC)	0	Combine with TSS
Heavy Metals	1	
Petroleum Hydrocarbons	1	
Pesticide, Herbicide	1	
Total Number of Bottles (1000 ml)	5	

ATTACHMENT 3

**CHAIN OF CUSTODY / SAMPLING
ANALYSIS REQUEST FORM**

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Age Group	Percentage of Respondents
18-29	85%
30-39	80%
40-49	75%
50-59	65%
60+	45%

The graph plots 'Days of Rain' on the horizontal axis (0 to 10) against 'Days of Sunshine' on the vertical axis (0 to 10). There are 10 data points plotted, showing a clear downward trend. A line of best fit is drawn, starting at approximately (0, 10) and ending at (10, 0).

Days of Rain (X)	Days of Sunshine (Y)
1	9
2	8
3	7
4	6
5	5
6	4
7	3
8	2
9	1
10	0

Chain of Custody/Sampling Analyses Request Form

Sampler's Date: _____

Sampler's Signature: _____

[illegible]

Total Number of Containers in Cooler:

Relinquished By: (signature)

Date/Time

Received By: (signature)

Date/Time

Relinquished By: (signature)

Date/Time

Received By: (signature)

Date/Time

Relinquished By: _____ (signature)

Date/Time

Received By Laboratory Custodian
(signature)

Date/Time

Method of Shipment:

(shipment I.D. number)

Note: Return original signed Chain-of-Custody record, cooler and blue ice to

as soon as possible